

How to Use Web Services: Connection and Sharing Guidance for Providers

EPA's ENERGY STAR Portfolio Manager tool helps users measure and track the energy use, water use, and greenhouse gas emissions of their buildings, all in a secure online environment. The tool can be used to identify under-performing buildings, set investment priorities, verify efficiency improvements, and receive EPA recognition for superior energy performance.

In order to exchange data in Portfolio Manager, users must set up a connection with a web services provider account and then share their properties and/or meters with this account. This document outlines how to set up this connection, and share access to properties and meters.

In the first step, the user will add you, the web services provider, as a "contact" in his or her account, and send you a connection request. After you accept the connection, the user shares properties and/or meters with you, and you will then be able to accept those properties and/or meters. The connection and sharing steps, from the user's perspective and your own, are outlined in Parts 1 and 2 below.

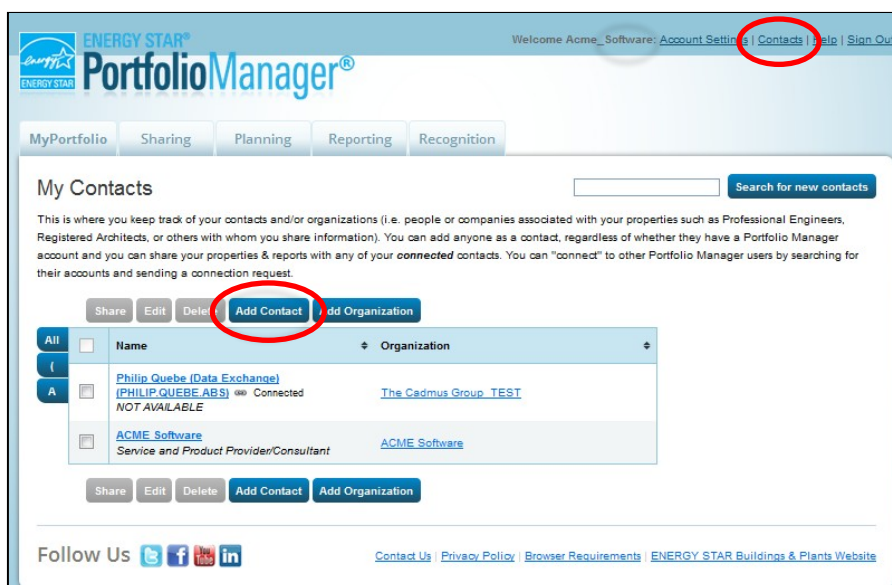
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1A User Adds You as a Contact

The user initiates the sharing process by adding you as a contact using the following steps:

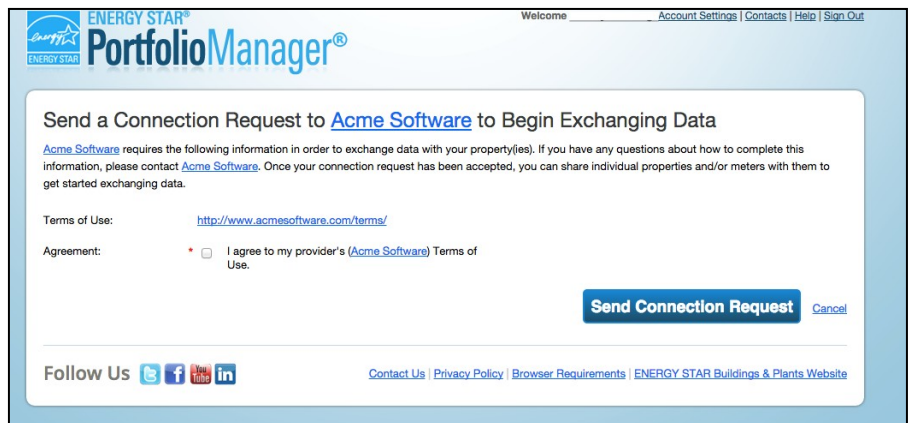
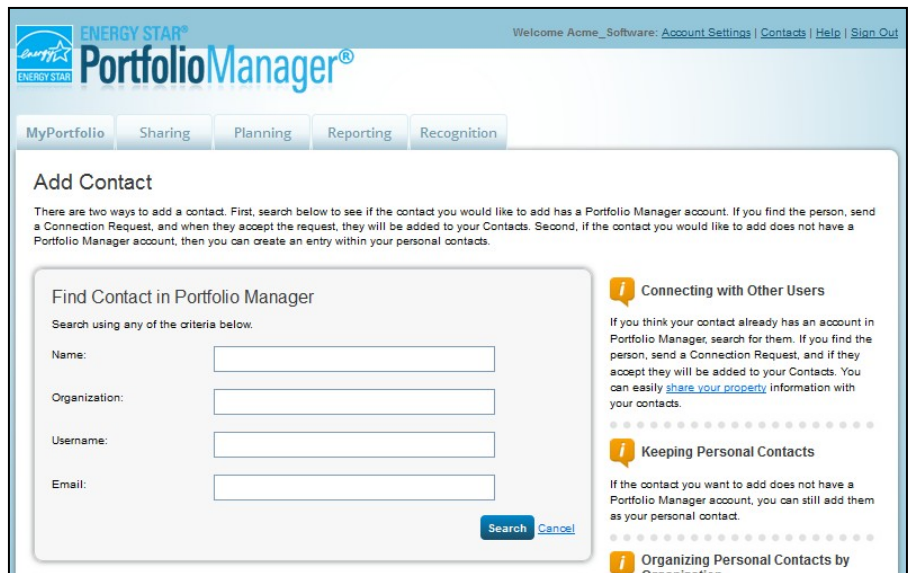
1. The user logs in to Portfolio Manager and clicks on the **Contacts** link in the upper right-hand corner.
2. On the **My Contacts** page, the user selects **Add Contact**.



3. On the **Add Contact** page, the user can search for your organization by name, username or email address. The user will have the easiest time finding your account when given the exact username to enter on this page.

Note: You must specifically allow your account to be searchable in Portfolio Manager. Enable this function on the **Your Preferences** tab under **Account Settings**.

4. The user selects your organization from the search results and clicks on the **Connect** button.
5. After selecting **Connect**, the user will be prompted to accept any terms of use you have specified. They will also be asked to submit any account-level information in the custom fields that you have configured previously via web services (if applicable). The user then selects **Send Connection Request**.



1B You Accept the Connection

1. You can obtain a list of pending connection requests by running [GET /connect/account/pending/list](#).
2. Accept those requests by running [POST /connect/account/\(accountId\)](#) or by accepting any pending connections in your Portfolio Manager account's notifications section on the MyPortfolio tab of the user interface.
3. The user is notified that you have accepted their connection request via a message in the "Notifications" section on the main screen of Portfolio Manager.

2A User Shares a Property and/or Meters with You

The user shares properties and meters with you using the steps below:

1. The user will log in to Portfolio Manager, click on the **Sharing** tab and select **Set Up Web Services/Data Exchange**.
2. On the **Share Properties for Exchanging Data** screen, the user selects your account from the dropdown list of their connected web services accounts, and selects the property(ies) that he or she wishes to share.

When sharing properties with you, the user can either choose to set permission levels in bulk for all properties and meters (**Path 1**) or provide different levels of access for each property/meter (**Path 2**).

3. **Path 1: "I want to set permission levels in bulk for all selected properties and meters."** If the user chooses to set permission levels in bulk, they can share everything at the same permission level using the applicable radio buttons or they can use the **Exchange Data Custom Access** option to grant differing levels of access by meter type, as long as those access levels are consistent across all properties for each meter type (for example: full access to all electric meters but read-only access to all gas meters).

Users setting permissions in bulk will set their desired permissions on this page and then click "Authorize Exchange."

Note: If you require the entry of custom fields when users share properties or meters with your account, Portfolio Manager will allow the user to download an Excel spreadsheet that they can use to populate custom field values for each property/meter they are sharing. This spreadsheet can then be submitted to the Portfolio Manager technical team, which will help to complete the sharing process. The process of creating those shares will take about a week.

Share Properties for Exchanging Data

The screenshot shows the 'Share Properties for Exchanging Data' interface. At the top, a progress bar indicates four steps: 'Choose Permissions' (active), 'Set Up Connections', 'Check Existing Permissions', and 'View Results/Confirmation'. Below the progress bar, a note states: 'Sometimes it's really important to be able to share your property with someone else. Use this option to set up automatic exchange of data with your utility or service provider.'

Step 1: 'Select Web Services Provider (Account)'. It asks 'Which web services provider (account) do you want to share these properties with in order to exchange data? You can share multiple properties at once with a single provider.' Below is a dropdown menu showing 'John Smith (Cadmus_Web_Services)' with a red arrow pointing to it.

Step 2: 'Select Properties'. It asks 'Which Properties do you want to share? Note that while you can share properties that include unsupported meter types, those specific meters will not be shared.' Below are two dropdown menus: 'One Property' and 'EXAMPLE TRAINING TEST', with a red arrow pointing to the second one.

Step 3: 'Choose Permissions'. It explains: 'If you only need to choose one permission (because you are doing a single share or you want to give the same permissions for all your shares), you can choose that permission here. Otherwise, you may assign different permissions for different properties and/or contacts on the next screen.'

There are two main options with radio buttons:

- Selected (Path 1):** 'I want to set permission levels in bulk for all selected properties and meters.'
 - ☐ Exchange Data Full Access (with full access to all properties and meters)
 - ☐ Exchange Data Read Only Access (with read only access to all properties and meters)
 - ☐ Exchange Data Custom Access (customized access by meter type, such as electricity and gas, for all properties)
 - ☐ Remove Access (i.e. remove existing access to all properties)
- Unselected (Path 2):** 'I want to provide different levels of access for each property or to each individual meter within a property.'

At the bottom right, there are two buttons: 'Authorize Exchange' (highlighted with a red arrow) and 'Cancel'.

i Unlike "regular sharing," when you "bulk share" with a Web Service Provider, you can only pick one provider. This is because the bulk share depends on the requirements/settings of the provider.

4. **Path 2: “I want to provide different levels of access for each property or to each individual meter within a property.”** If the user needs to set different levels of access for each property, they’ll select the appropriate radio button and then click the “Set Permissions” button. They will be directed to the **Share Your Property(ies)** page. On the next page (see screenshot to the right), the selected properties will appear on a permissions selection screen. The user will click the radio button for **Exchange Data** for each property.

Share Your Property(ies)

To finish up, tell us what type of access the people you have selected should have for each of the properties that you have selected. The option to exchange data is only available for authorized accounts.

Select Permissions for Each Contact
The access levels you select do not have to be the same for each property or each person.

Sort by: Property Name

Name (ID)	None	Read Only Access	Full Access	Custom Access	Exchange Data
Smith Bank (4481698)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Acme Software	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Share Property(ies)

Select Access Permissions to Smith Bank for Acme Software.

Acme Software requires the following information in order to provide services to your property(ies). If you have any questions about how to complete this information, please contact Acme Software.

Lot Number: Example: FG 323
Lot Number for the property in ACME Building system.; 1 - 12 Characters [More Information](#)

Please select the permission level you would like to grant Acme Software for Smith Bank for each category. If "None" is selected for all items, Acme Software will not receive any access to this property.

Item	None	Read Only Access	Full Access	Meter Number1
Property Information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
All Meter Information				
Electric Grid Meter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="text"/>

A dialog box will appear that allows the user to select a level of access for exchanging data for a property and its meters. Options include None, Read Only Access, and Full Access.

If the user is not able to send meter share requests, it is likely that your system has not been set up to support that specific meter type. If this is the case, the user will receive an alert beneath the dialogue box.

The user can also enter values for property-level and meter-level custom ID fields on this screen. Examples of such custom ID fields could include “utility account ID,” “meter number,” or any other custom identifier information that you wish to collect from your customer.

2B

You Accept the Property and Meter Shares

After the Portfolio Manager user has generated a property-level and/or meter-level sharing request, you must retrieve the request and accept or reject it. Use the steps below to search for and accept property and meter share requests:

- Search for pending property share requests using [GET /share/property/pending/list](#).
- Accept/reject pending property share requests by running [POST /share/property/\(propertyId\)](#).

- Search for pending meter share requests using [GET /share/meter/pending/list](#).
- Accept/reject pending meter share requests by running [POST /share/meter/\(meterId\)](#).

A user may choose to share a property, but not its corresponding meters. Alternatively, a user may choose to share meters, but not their corresponding property. If a meter has been shared, but the user does not share the property, the permissions screen will automatically mark the property as “read-only.” If you accept a meter share, any pending property share associated with that meter will be automatically accepted. Acceptance of a property-level share **does not** cause corresponding meter share requests to be accepted. Meter-level sharing requests must be accepted separately.

You can disconnect from a user at any time using the [POST /disconnect/account/\(accountId\)](#) service. To remove all associated property- and meter-level shares when you disconnect from a user’s account, you must set an optional flag in the account disconnect service that will also remove all property and meter shares. You can also remove individual property or meter shares at any time using [POST /unshare/property/\(propertyId\)](#) and [POST /unshare/meter/\(meterId\)](#).

Learn More!

To learn more about Portfolio Manager, visit www.energystar.gov/benchmark.

To reference the ENERGY STAR Guide for Licensed Professionals, visit <http://www.energystar.gov/buildings/tools-and-resources/energy-star-guide-licensed-professionals>.

To get answers to your questions, visit www.energystar.gov/buildingshelp.

Appendix A: Managing “Share Forward” Functionality

Portfolio Manager allows users to “Share Forward,” or share a property that was shared with them. For example, a property owner may share a property with a consultant (or another “middleman”), which in turn may execute a web services share with a utility or energy information services provider. In Portfolio Manager, the account in which the property record was originally created is called the “Property Data Administrator” (PDA). All web service shares, whether originated by the PDA or by a “middleman,” will be accessed subsequently by the web service provider by calling the PDA’s account ID.

To enable this, Share Audit information is included with each pending share request, and will always list the PDA’s account ID in the <accountID> field. The <notificationCreatedBy> and <notificationCreatedByAccountId> fields will identify the account that generated the share, allowing you to determine whether a share request was initiated by the PDA or by a “middleman” account. Middleman accounts can also be identified after the share has been accepted by using the GET /Metrics web service to access the <propertySharedBy> metric.

The way that you receive and process these shares will depend on whether or not you are connected to the PDA’s account. Furthermore, the order in which you process pending account-level connections and property or meter shares may be important to your authorization process.

A. *If you are already connected to the requestor:*

Accept or reject the property and meter share requests as outlined in Part 2 above.

B. *If you are not already connected to the requestor:*

You will receive an account connection request from the PDA (1), in addition to the individual property and meter share requests (2). You may take the following actions:

- If you Accept 1 first; you can either Accept or Reject 2
- If you Reject 1; you automatically Reject 2
- If you Accept 2 first; you automatically Accept 1
- If you Reject 2; you can either Accept or Reject 1

In scenario B, we recommend processing the account-level connection request first if your system requires a valid account-level connection before transmitting meter data.

Please note that pending property and meter share requests, as shown in a GET /share/meter/pending/list or GET /share/property/pending/list response, contain the account ID of their PDA account. It is recommended that you parse these share requests to obtain the PDA’s account ID, and to store this information in your database. You will not see the connection request from the PDA if you accept one of their property or meter shares first.

If you are not able to do this during the share, you can access the PDA’s account information after accepting the share by running a GET /metrics call and including the metrics propertyDataAdministrator and propertyDataAdministratorAccountId.

Appendix B: Ongoing Share Management

Edits to Your Access Levels by the PDA and Other Users

Once established, sharing permissions can be revised at any time by the PDA or any other user with full access to the property and/or meter. When a user makes edits to your access, such as editing your permissions to individual meters, or editing your permissions to a property, you will receive a notification for each edit made. These notifications can be obtained by running [GET /notification/list](#); an example notification is provided below:

```
<notificationList>
  <notification>
    <notificationTypeCode>SHAREUPDATE</notificationTypeCode>
    <notificationId>129681</notificationId>
    <description>Electric Grid Meter - Access level revised to Read Only by
    Customer John.</description>
    <accountId>8833843022</accountId>
    <username>cwtraining</username>
    <propertyId>5234642</propertyId>
    <meterId>541018</meterId>
    <notificationCreatedDate>2020-08-10T11:19:25-
    04:00</notificationCreatedDate>
    <notificationCreatedBy>cwtraining</notificationCreatedBy>
    <notificationCreatedByAccountId>88338</notificationCreatedByAccountId>
  </notification>
</notificationList>
```

By default, once a notification is pulled down via the GET Notifications call, it is marked as “read” and will not be available in subsequent calls. However, you have the option to mark notifications as unread – and therefore retain them for later access – by specifying “?clear=false” as part of the call URL.

Please note that if your account is not connected with the account that edited your access, you will need to establish an account level connection with them in order to pull additional information regarding their account.

Permissions edits automatically take effect; you do not need to accept them. The same process occurs when a user deletes a meter from a property they’ve shared with you.

Shares that are not edited by a user will remain unchanged. When a user shares a new meter with you on a property with additional meters that have already been shared with you, those already established property and meter shares will not be affected; you will only need to accept the new meter share.

As a best practice, EPA recommends that all providers exchanging data with users check their pending connection requests, property and meter share requests, as well as share edit notifications at the beginning of each session when using Portfolio Manager’s web services.

Appendix C: Transfer of Ownership

Portfolio Manager also allows the transfer of a property record from one account to another account (i.e., making someone else the PDA). Typically, an ownership transfer happens in one of two cases:

- **An actual change in ownership (deed/title).** In this case, the physical property is bought/sold and the old owner gives the Portfolio Manager record to the new owner.
- **Staffing change within a company.** In this case, Company XYZ may own the property and it is managed in Jane Doe's account. When Jane leaves Company XYZ, she transfers ownership of the Portfolio Manager record to Mike Smith, who will take over as PDA.

When a user attempts to transfer a property from one account to another, the receiving account has the option to either accept or reject the transfer. If a transferred property was previously shared with a web services provider with whom the receiving account is not yet connected, the receiving account is prompted by Portfolio Manager with three options:

- 1) **Accept the transfer and issue a connection request** to the web services provider account in order to maintain provider access to the property. In this case, the recipient must accept the provider's terms and conditions and provide data for any custom fields required by the provider.
- 2) **Postpone the transfer.** In this case, the transfer will remain "pending" (unaccepted) until the connection request is submitted and accepted. The original share between the account attempting to transfer and the provider remains unaffected.
- 3) **Accept the transfer, but remove the provider's access to the property.** This removes the web service provider's access to the property.

Accept Transfers for Properties Managed by Web Services

You have selected to accept the property transfer request for the property(ies) listed in the table below. Each property listed currently has data managed by a [Web Services Provider](#). In order for the service to continue, you must be [connected](#) to them as the new [Property Data Administrator](#). Alternatively, you can choose to unshare the property with the Web Services Provider, but please note they will not longer be able to update this property.

Web Services Provider Name	Connect Now with Provider (Property will be transferred)	Connect Later with Provider (Property will NOT be transferred)	Remove Provider's Access (Property will be transferred)
▼ John Smith	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
FEDERAL TEST OFFICE			



Don't Have This Information?

If you don't have this information available to you at the moment, you can simply click the cancel link on this page or the Keep Transfer Pending and Connect Later option. The transfer property requests will remain pending in your account until you have this information ready. You can view the notifications on the my [My Portfolio](#) tab.

[Accept Transfer](#) [Cancel](#)

When a property transfer takes place, and the recipient issues a connection request to your account to maintain your access, you receive both a connection request from the recipient through [GET connect/account/pending/list](#) and a web services notification through [GET /notification/list](#) telling you that the property has been transferred. The notification includes the ID of the property that was transferred and the account ID and username of the new PDA. You will be able to continue servicing the existing property and meter even before processing the new account connection request, but you will not be able to access the account information of the new PDA until you accept the new account connection.

If the recipient account chooses to accept the transfer but remove your access, you will receive a transfer notification and unshare notifications for the property and its meters through [GET /notification/list](#).

If you do not know the new PDA or why the property was transferred, it is up to you to decide whether you want to accept the PDA's connection request and continue to exchange data.